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EXTREMELY LOW BIRTH WEIGHT BABIES

Dear Editor,

This is in reference to the article 'Extremely low birth weight babies' [1]. The author needs to be congratulated on an excellent effort in saving two neonates born as extremely low birth weight babies in a level 1 NICU with no ventilator facility. The point proven by the article is that preterm neonates need constant attention with minimum handling, prevent sepsis with strict aseptic protocols and dedicated 24 hours nursing. And the most important message for all involved in the care of preterm is that breast milk remains the best for even these tiny neonates with no need for formula feeds. In the context of baby friendly hospital initiative program, this message is relevant. As a recognized baby friendly hospital, our protocol has been similar i.e. exclusive breast-feeding for all neonates including all preterms and participation of mother in the day to day care.

Rational scientific evidence together with the gold standard of the randomized, controlled trial have taught us the benefits of some of our current basic neonatal feeding practices while demonstrating a paucity of adverse effects. For example, early hydration with intravenous glucose was demonstrated three decades ago to improve survival while reducing the incidence of azotemia, oliguria, hyperbilirubinemia, hypoglycaemia and hypothermia [2]. One strong conclusion is that gastrointestinal priming must become the standard of care for very low birth weight infants. Also known as minimal feeds, gut stimulation, or hypocaloric feedings, this practice attempts to prepare the premature infant's intestine for later advancement of full enteral feedings while preventing the known mucosal atrophy and unphysiological gut hormone status noted in animals and human kept NPO [3]. Further human milk feeding has been shown to reduce the incidence of necrotizing enterocolitis and to improve cognitive function in very low birth weight infants [4].

A job well done needs kudos! However a proper follow up of these high risk neonates is equally important to identify certain expected deviations in such extremely low birth weight neonates and take corrective action. It is mandatory to follow up low birth weight babies for auditory function, visual including retinopathy of prematurity, developmental milestones and later on cognitive functions,

since both children must be around five years now, it would be worthwhile screening them for minor learning disorders. In a cohort study at two tertiary care centers, singleton infants (n=127) with fetal growth retardation due to placental insufficiency at a gestational age of 26 to 32 weeks during the years 1984-1989 were studied. Main outcome measures were special education, mainstream education below the appropriate age level and behaviour according to attention deficit hyperactivity criteria at school age (4 1/2-10 1/2 years). 114(90%) had a complete follow-up. Special education was found in 14% of the assessed children. More children in the older age group than in the younger age group were placed in special school (20% versus 10%). Behavioral problems were scored in 39% of the assessed children attending mainstream education. The authors conclude that this specific group of growth-retarded children is at serious disadvantage for adequate performance in school, although the incidence of special education and behavioral problems was comparable to other preterm infants [5].

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NECROTIZING FASCIITIS

Dear Editor,

A 47-year-old ex-serviceman presented with a large infected perianal wound as a result of drainage of perirectal abscess at a peripheral civil hospital. At admission the perianorectal wound was unhealthy and coated with greyish slough. Thorough debridement of the wound was done and supportive measures were started. There were no signs of toxemia. Patient was not diabetic. The repeated debridement was carried out at intervals of every 2 to 3 days, but wound became unhealthy with greyish-blackish discoloration. A

record number of 11 times wound debridement was carried out and 14 units of blood were transfused. Despite aggressive repeated debridement, broad-spectrum antibiotics, blood transfusions, loop sigmoidostomy and other supportive measures, patient died of fulminant sepsis. The histopathological examination of the excised tissue revealed non-specific vasculitis.

In reference to this case, I want to highlight some of the features of this dreaded disease. The synergistic necrotizing fascitis described by Fournier, is a highly lethal and rapidly progressive necrotizing

infection of the perineal and genital fascia, with gangrene of the overlying skin. It is a rare disease but a life-threatening condition. In spite of newer diagnostic techniques, the etiology remains unclear in one-fourth of cases [1]. Anorectal, genitourinary traumatic infections are the most common causes of Fournier's gangrene. The infecting organisms comprise both aerobic and anaerobic organisms such as *Escherichia coli*, *Streptococcus pyogenes*, *Pseudomonas aeruginosa*, *Klebsiella pneumonia*, *Proteus mirabilis*, *Enterococci*, *Bacteroides fragilis* and anaerobic *Streptococcus*. The early detection, extensive surgical debridement, parenteral broad-spectrum antibiotics, intravenous metronidazole, haemodynamic resuscitation and nutritional support are crucial to survival in this potentially lethal disease. Sometimes multiple surgical procedures may be necessary to bring the infection under control. In a report from literature, the surgical resection and antibiotic treatment failed to halt progression of the disease in one case but complete remission in the disease was achieved by high dose corticosteroid therapy [2]. The response to steroids suggests that Fournier's gangrene represents a local schwartzman phenomenon. Diversion of faecal and urinary streams may not always be necessary but should be considered on a case by case basis. In the present case a diverting colostomy was performed to avoid contamination of the perineal wound. The Fournier's gangrene has also been found as the presenting sign in an undiagnosed human immunodeficiency virus infection [3]. The

value of hyperbaric oxygenation in Fournier's gangrene remains unproven [4]. The reported mortality rates in different series range between 22 and 60% [5]. To summarize, it is a polymicrobial synergistic infection and the aggressive surgical debridement, broad spectrum antibiotics and plastic reconstructive techniques have all contributed to a better survival of these patients in the recent years.

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ANAESTHESIA FOR PATIENTS WITH TRANSPLANTED HEART

Dear Editor,

Heart transplantation is now an accepted treatment for end-stage cardiac disease. The chief indications for orthotopic heart transplantation in children are congenital abnormalities such as hypoplastic left heart syndrome, endocardial fibroelastosis, cardiomyopathies and poor results from cardiac surgeries. The Royal children Hospital, Melbourne has an ongoing heart transplantation programme and has a large number of patients dependent on it for long term care.

Recently, three patients between the age group of 18-38 months who had undergone heart transplantation previously, were subjected to general anaesthetic for endomyocardial biopsy which is a routine follow-up procedure in such cases. All the patients had a normal echocardiogram and 12 lead electrocardiogram. Their exercise tolerance was satisfactory and there was no evidence of graft rejection or cardiac failure. The biochemical parameters with special reference to liver function tests and urea, creatinine were within normal range. They were receiving cyclosporine as immunosuppressant drug and appeared to be free of its toxic effects. Midazolam (0.4 mg/kg) was given orally about 45 minutes prior to the commencement of anaesthesia. In the induction room adjacent to the theatre, the patients were induced using a mixture of oxygen, air and sevoflurane and tracheal intubation was facilitated with atracurium. Fentanyl was added in the dosages of 1 µg/Kg. Thereafter anaesthesia was maintained using oxygen, air and isoflurane and the lungs were mechanically ventilated in pressure controlled ventilation mode. The right sided internal jugular vein was cannulated in one case whereas in others, the biopsy was performed through right femoral vein. Monitoring consisted of pulse oximeter, non invasive blood pressure, end tibial carbon-dioxide, electrocardiogram, spirometry, respiratory mechanics and nasopharyngeal temperature. Intraoperatively haemodynamic parameters were noted to remain stable however events such as threading of the catheter and performance of biopsy, were marked with innocuous premature ventricular contractions. Spontaneous respiration was allowed to return at the end of the procedure and no anticholinesterases were used.

Preoperative assessment in children with heart transplantation, is

aimed at detecting early evidence of cardiac failure and signs of rejection of graft such as failure to thrive or poor appetite. The other indicators are episodes of arrhythmia, low voltage complexes on ECG and low ejection fraction on echocardiography. The ECG may also point towards any underlying ischaemia since these patients have an accelerated tendency to develop coronary atherosclerosis which could be as high as 15%. The other important consideration is risk of infection because of long term immunosuppression. Commonly used drugs are cyclosporin-A, azathioprin, antilymphocyte globulin, FK506 and steroids. Usually these patients are on lifelong cyclosporin and other drugs are added only if there are signs of rejection. Cyclosporin-A is known to have toxic effects on liver as well on the kidney and may also induce hypertension. Aseptic methods should be followed scrupulously and prophylactic antibiotics are mandatory. Cephazolin in the dosages of 20 mg/kg is given at this institute. Blood transfusion if required should be given through a white cell filter so as to destroy 't' cells which may provoke graft versus host (GVH) disease. During anaesthesia, usually there is no cardiovascular response to intubation due to denervation of heart. For similar reasons, tachycardiac response to light plane of anaesthesia or hypovolemia is blunted and heart is unresponsive to atropine. However, direct effects of sympathomimetic drugs are maintained and heart responds well to exogenous catecholamines. Hence, isoprenaline or adrenaline should be readily available to control the heart rate in case of bradycardia [1]. A technique such as described above consisting of inhalational induction or intravenous induction with propofol and maintenance with isoflurane in oxygen and atracurium appears to be safe and acceptable [2]. The analgesic regimes have not been shown to be different and fentanyl or morphine are equally effective. The heart is preload dependent and therefore there is need to ensure adequate hydration. Dangerous arrhythmias during anaesthesia are uncommon, however all the antiarrhythmic drugs function normally on the transplanted heart except perhaps digoxin which needs integrity of autonomic nervous system for its action. Occasionally, these patients are the recipients of lungs as well and they are subjected to endobronchial biopsy. In such children it is prudent to avoid nitrous oxide as it may increase